

TESTIMONY OF  
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together with

HEIDI JACOBUS, CEO of Cybernet Systems Corporation

and

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Board Members of the Small Business Technology Coalition

Before the

HOUSE ARMED SERVICES COMMITTEE  
U.S. CONGRESS

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Mr. Chairman and distinguished members of the Committee, it is an honor to have the opportunity to appear before you today and give your Committee some perspectives from the small business community that serves the Department of Defense and other federal agencies. I am Nick Karangelen, president of Trident Systems Incorporated of Fairfax, Virginia. With me are Heidi Jacobus, CEO of Cybernet Systems Corporation of Ann Arbor, Michigan and Bill Broderick CFO of Analytical Graphics Incorporated of Exton Pennsylvania. We run small businesses that have significant contracts with the Department of Defense. Together, we have 54 years of experience in the small business sector. We also serve together as board members of the Small Business Technology Coalition. The Coalition is a non-partisan, nonprofit industry association of companies dedicated to promoting the creation and growth of research-intensive, technology - based U.S. small business. The Coalition includes about 200 small technology businesses that deal with the federal government.

We are here today to thank you and your Committee for your outstanding support of the nation's small business community that serves the Department of Defense, and to make suggestions to you that we believe can significantly improve the effectiveness of military systems while at the same time reducing cost and shortening development cycles.

There are 4 points I would like to make:

First, we appreciate the outstanding effort that each Member of this Committee makes to support our men and women around the globe as they protect our nation and wage the war on terrorism.

Second, over the last decade significant improvement has been accomplished to widen the role of small businesses in Department of Defense contracting. This would not have been possible without strong support from the Congress in general, and the House Armed Services Committee in particular. We appreciate what you have done for us, and thank you.

Third, your Committee included language in your fiscal year 2005 Defense Authorization bill which begins the process of changing the DOD culture to encourage program managers to incorporate more small businesses and their cutting-edge technology into mainstream procurement programs. We thank you for your continued leadership in behalf of the nation's small business community, and urge you to retain this language when your Committee goes to conference with the Senate.

Fourth, while we have made significant progress in broadening research opportunities for small businesses in the Department of Defense there remain significant cultural barriers within the Department for transition of innovative technology developed by the nation's small businesses into mainstream weapon system acquisitions. We have recommendations that if adopted we believe would inject more small business developed

innovative technology into defense systems for our warfighters while at the same time lowering costs. I would like to just take a moment to explain these proposals to you now.

Small business is widely recognized as the engine of innovation in America and the catalyst for developing ground-breaking technology and novel products. In February 2000 the US Small Business Administration's (SBA) Office of Advocacy published a working paper<sup>1</sup> summarizing the results of a number of earlier studies addressing small business in the US economy. The working paper reported that small businesses employed just over half (53%) of the US work force, over a third (36%) of the degreed engineers and scientists, and accounted for 14% of all non-federal expenditures of R&D in the US. A study conducted by the National Science Foundation titled *Will Small Business Become the Nation's Leading Employer of Graduates with Bachelor's Degrees in Science and Engineering?*<sup>2</sup> concluded, "as a group, small businesses hire as many recent S&E graduates as do larger ones, and also as many of all other sectors of the U.S. economy combined". The SBA white paper also points out that small business participation in Federally funded research and development has consistently been reported as less than four percent, far below their percentage of technology employment, industrially funded research and development, and other indicators of business innovation (e.g. patent awards). In fact, just the top 100 Department of Defense contractors received 88.9% of DoD RDT&E funding in 2003 (in an increasing trend from 85.5% in 2001.) This reflects the growing strong preference of DoD Program Managers for large contractors and the missed opportunities to leverage both the significant R&D capabilities represented by small firms as well as the products small firms have developed under their own industrially funded research.

Congress established the SBIR program in 1982 to ensure that federal R&D procurement officers and program managers made use of the wealth of resources available from small businesses in addressing the mission and research needs of their agencies. The GAO has studied and reported favorably on the SBIR program a number of times since it was originally authorized, endorsing the quality of research and the highly competitive nature of the SBIR award process.

The federal Small Business Innovation Research (SBIR) program has several phases. Phases I and II deal with research and development, while Phase III deals with the transition of successful research efforts to continuing R&D and to production. It is the Phase III portion of the program that needs your Committee's attention now.

Several years ago, the Congress clarified a number of SBIR data rights and Phase III contracting issues affirming DoD program managers' authority to transition successful SBIR projects into the mainstream of DoD acquisition, particularly into large programs, through the award of Phase III SBIR contracts. A small but growing number of DoD

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<sup>1</sup> *A New View of Government, University, and Industry Partnerships*, Office of Advocacy, U.S. Small Business Administration, February 2000.

<sup>2</sup> *Will Small Business Become the Nation Leading Employer of Graduates with Bachelor's Degrees in Science and Engineering?*, Division of Science Resource Studies, National Science Foundation, January 1999

Program Managers (mostly in the Navy) who recognize the significant contribution which small business can make to their programs have seized on this opportunity and transitioned SBIR technology into their programs through award of Phase III SBIR contracts.

An outstanding example of this is embodied by the Program Executive Office for Submarines (PEO Subs), Mr Richard McNamara who has fully embraced the SBIR program as a crucible for testing small business capability. PEO Subs has maximized the likelihood that its SBIR projects meet the needs of its program offices by soliciting topics from across all its programs and selecting topics according to Program Managers priorities by majority vote. Last year, for example, eight topics were selected from a pool of fifty-five. Small businesses selected for Phase I and Phase II awards are vetted both as technology developers and from a management capabilities point of view. The best of these small businesses selected by PEO Subs have been awarded over \$700 million in Phase III contracts since 1995, the largest being a \$169 million award in 2002 for the Tactical Control System portion of the Command Control System (CCS) MK2 for US nuclear submarines.

This example illustrates that a clear path exists for small business to make a significant contribution to large DoD programs in terms of improved capability, shorter development schedules and lower cost. A small, and slowly expanding, cadre of Defense Program Managers and Program Executive Officers, like Richard McNamara of the Navy, are effectively transitioning SBIR technology into their programs through award of substantial Phase III contracts. An informal survey found that DoD Phase III contract awards have risen every year from \$30 million in FY 1998 to \$342 million in FY 2003. It is clear that relevant research and development is being conducted by small business under the SBIR program and the contracting authority and resources are available to DoD program managers to transition successful SBIR developed technologies into DoD Acquisition programs of record.

However, in the overwhelming majority of cases, small businesses which have successfully developed relevant technologies under the SBIR program or otherwise are not transitioned into DoD acquisition programs of record. In some cases, the SBIR developed technologies may be seen as competing with established program interests or as a distraction from the program's plan. Some program managers may be unwilling to invest program funds in alternative technology candidates when they believe (as most do) that their programs are on track. Prime contractors are often polite but generally unwilling to bring in a promising externally developed technology when they have an internally developed alternative or believe (as most do) they can reasonably develop an alternative internally. In many cases, well intentioned attempts to include small business in major DoD programs fall short because of factors unrelated to the high technical quality, reduced costs, and shorter development times offered by small business and their technology solutions.

The Army's Future Combat System program(FCS) is an example of a large program which began with a modest plan for small business involvement in research and

development but, over time, contracted only a very small percentage (<1%) of the technical research and development effort to small business.

In your fiscal year 2005 Defense Authorization bill, this Committee directed that the Assistant Secretary of Defense for Acquisition and Logistics encourage DoD Acquisition Program Managers and Prime Contractors to make significantly more SBIR Phase III contract awards than has been done in the past and to report to Congress on Phase III award activity. This action begins to address what is perhaps the final barrier to more widespread employment of successful SBIR funded research and development in DoD acquisition programs: the DoD Acquisition culture which is focused on the execution of very large Defense Acquisition programs with very large contractors.

The Small Business Technology Coalition Board of Directors and the member small business technology companies we represent share the Committee's perspective that Phase III SBIR contracting is perhaps the most important aspect of the SBIR program because it is the mechanism for transition of SBIR funded research into DoD and is the most under-utilized facet of the Program. We would like to suggest that the House Armed Services Committee language to encourage more Department of Defense Phase III contract awards in FY 2005 merits follow-up in the FY 2006 Defense Authorization Bill.

The Small Business Technology Coalition has two recommendations for your consideration. First, establish an education initiative for prospective program managers at the Defense Acquisition University that will provide tools needed to facilitate the incorporation of small business technology that has been developed and paid for by the government into weapon system production. Second, your Committee should establish a matching funds incentive for Phase III SBIR contract awards. Our Coalition would be happy to provide you and your staff additional information on these proposals. Both of these recommendations could be centrally implemented within DoD by the Office of Secretary of Defense, Office of Small and Disadvantaged Business Utilization (OSD/OSADBU)

The first element of a candidate Phase III SBIR transition incentive would provide DoD Program Managers with matching R&D funds for each dollar of Program R&D committed to a Phase III contract with a SBIR company to continue development and/or insertion of SBIR developed technology. This should include a limit of not more than \$2 million in matching R&D funds for any single SBIR effort. The second element of the Phase III SBIR transition incentive would provide matching procurement funds (up to a limit of perhaps \$5 million per SBIR effort) for procurement of SBIR developed technology end items through direct contracts with a SBIR company or for SBIR developed items procured under a SBIR company's GSA schedule

A Phase III SBIR transition incentive such as the one we propose would provide a powerful rationale for Defense Program Managers to incorporate successful small business technology developments in their programs. It would help to overcome the resistance that established programs of record for defense weapon systems typically have

to emerging innovative technology opportunities that spring from the nation's small business community. This incentive would result in a growing number of Defense Program Managers with experience employing small high-tech businesses not only for providing rapid technology solutions, but also in the critical role of providing low cost risk mitigation and competitive alternatives in large complex Defense programs.

The payback from this initiative would be shortened development cycles, lower cost systems, and higher quality systems both from the specific contributions of innovative small companies and from the natural reaction of the large prime contractors to work harder in the face of small business efficiency and innovation. These properly transitioned Phase III efforts would stimulate DoD program managers to think more often about small business in providing competitive alternatives and rapid innovation in their programs and simultaneously broaden and strengthen the defense industry and manufacturing base in America.

We thank you again for your willingness to hear our perspectives on the increased role that the nation's small business community could have in bringing the brave men and women in uniform who are protecting our nation's freedom around the world and waging the war on terrorism with better technology at lower cost.